

L for time of concentration:
 $(6449-449)/2 = 3000'$

Use 5 fps flow rate

$T_c = (3000/5)$
 $T_c = 600$ sec or 10 min.

Intensity for 100 yr storm,
 $I = 2.80$ in/hr

$Q = CIA$

Assume strong storm, saturated ground as has happened occasionally in last 20 yrs.

$C = .85$

$I = 2.80$

$A = 27.2$ Acres

$Q = .85 \times 2.80 \times 27.2$

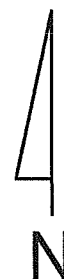
$Q = 64.75$ CFS @ Brush Road culvert.

Use 48" HDPE culvert for smooth walls and to pass any debris that gets through debris rack.

Per Figure 120, Capacity - Velocity Curves for Outlets Unsubmerged, p 234 of Handbook of Culvert and Drainage Practice, Henry D. Gilbert, 1947:

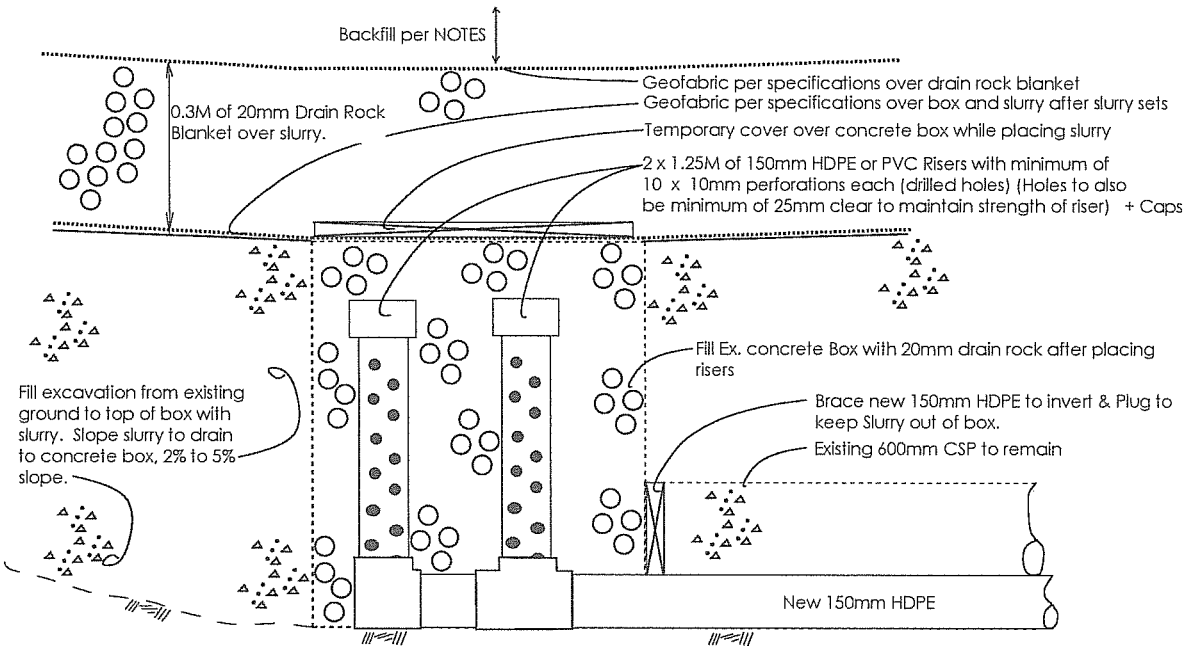
A 48" pipe (1200mm) @ 0.50% carries 80 cfs,
 $v = 8$ fps

A 60" pipe (1500mm) @ 0.50% Carries 140 cfs
 $v = 9$ fps

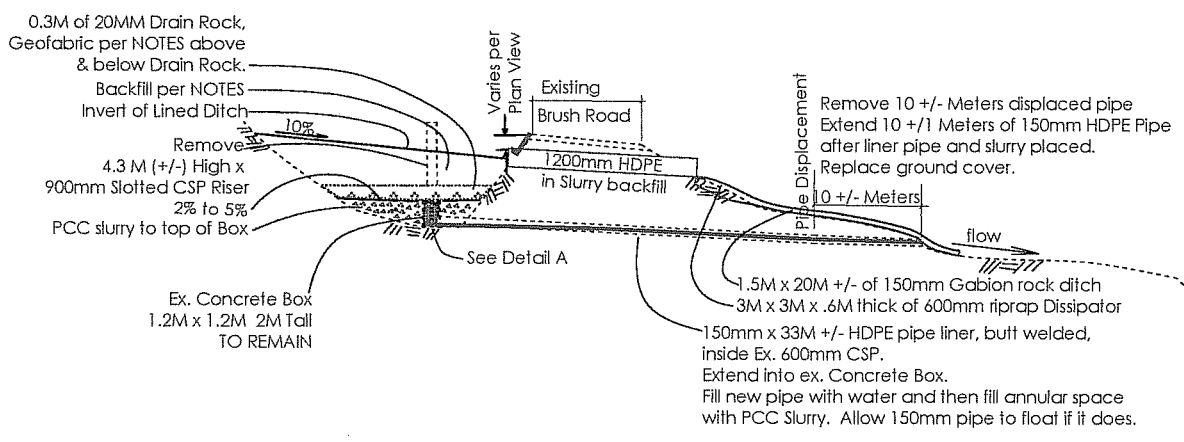


1" = 1,000'

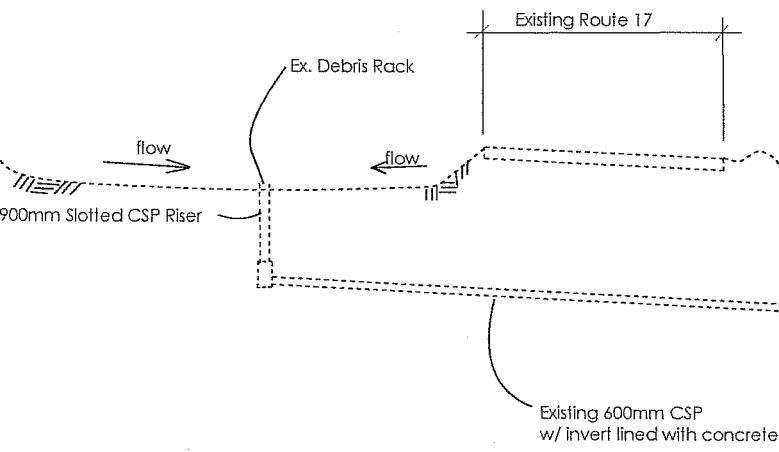
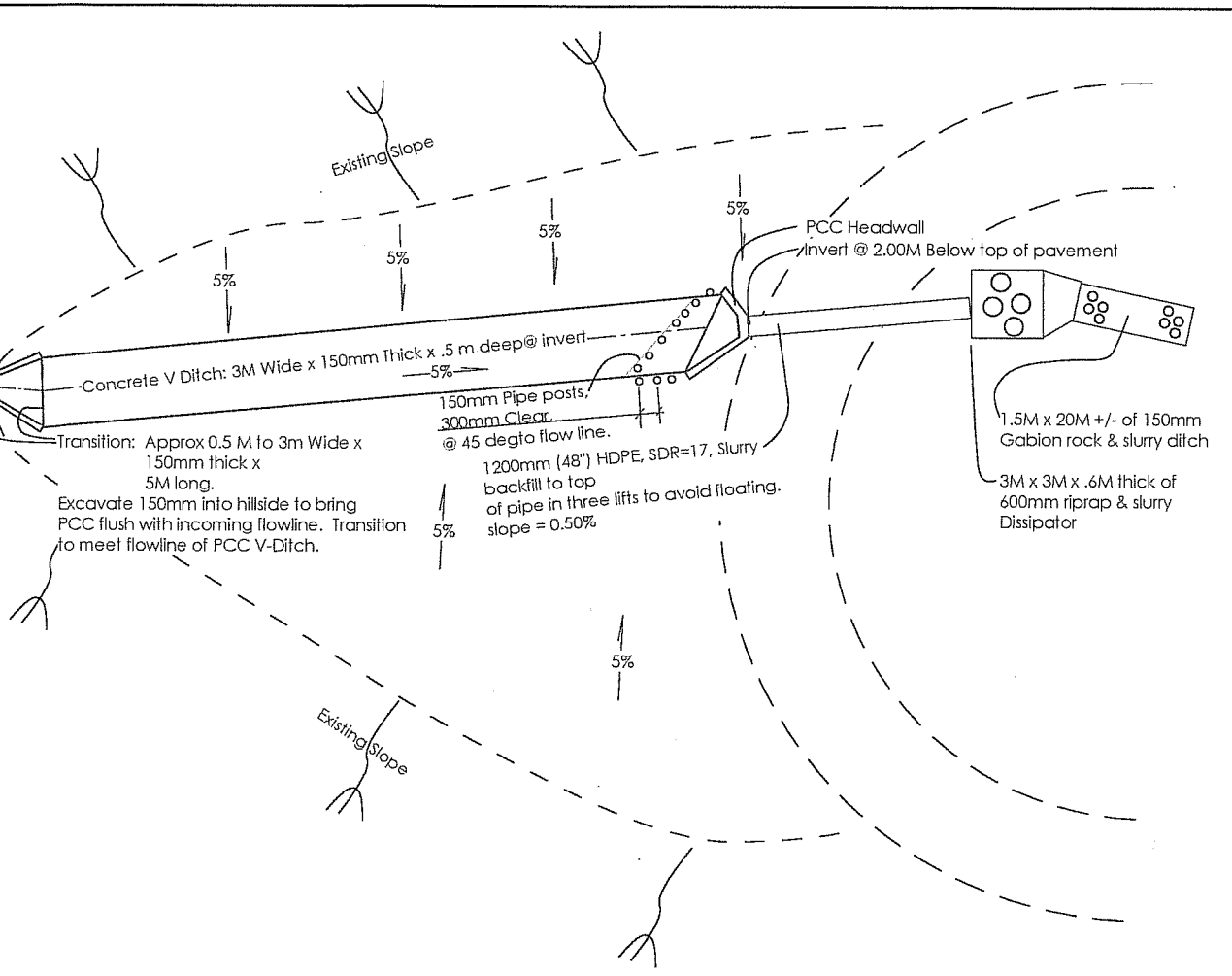
Brush Road Culvert
 Hydrological Study
 Roy A. Nelson, CE
 408-353-4303
 October 3, 2006



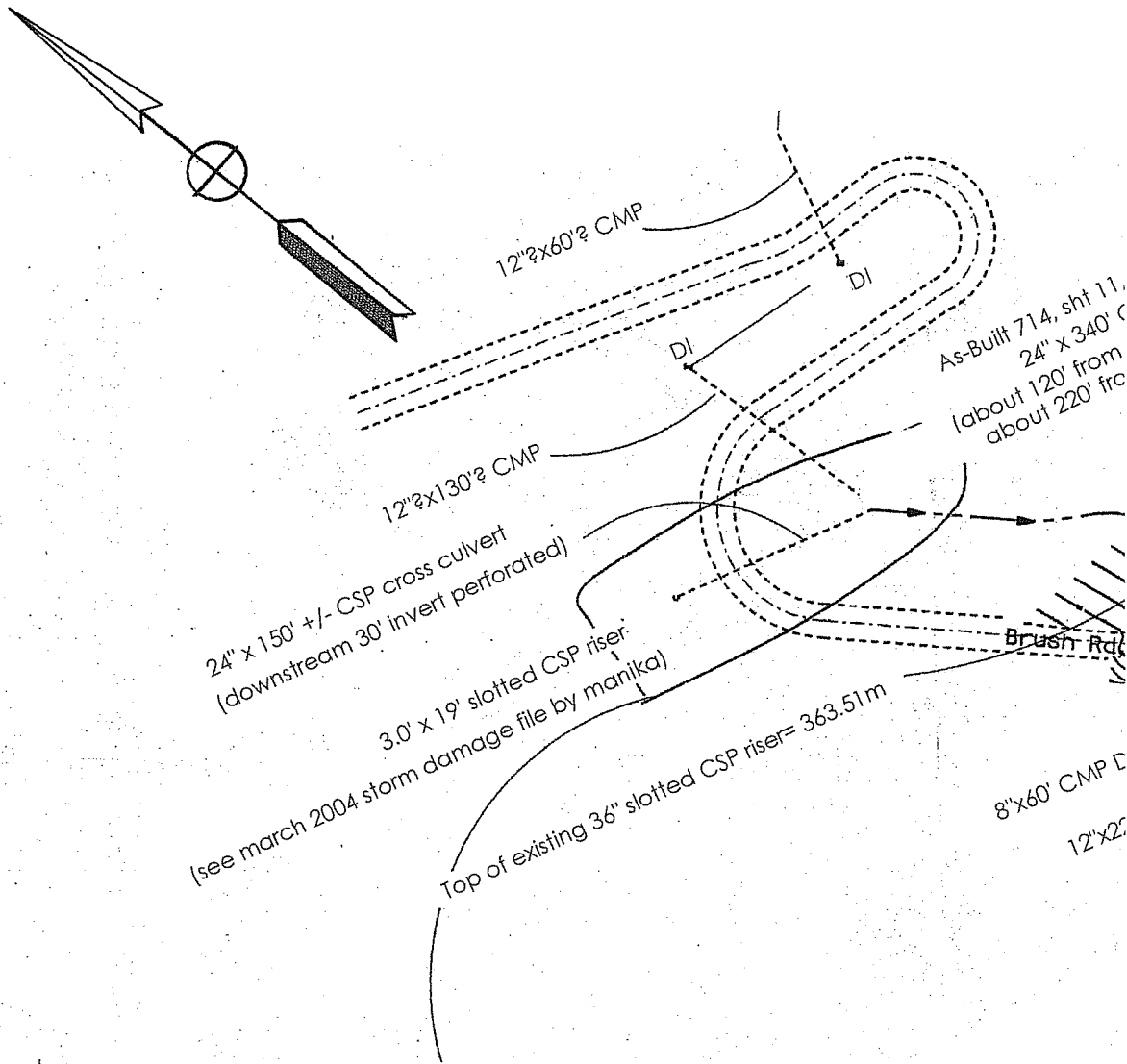
DETAIL A
NOT TO SCALE



Section View
Proposed Repair Plan
Brush Rd. near Route 17 PM 2.02



Brush Road Improvement Plans	
ROY A. NELSON, CE	8/18/06
<small>24665 GLENWOOD DR. LOS GATOS, CA 95025 408-353-4500</small>	

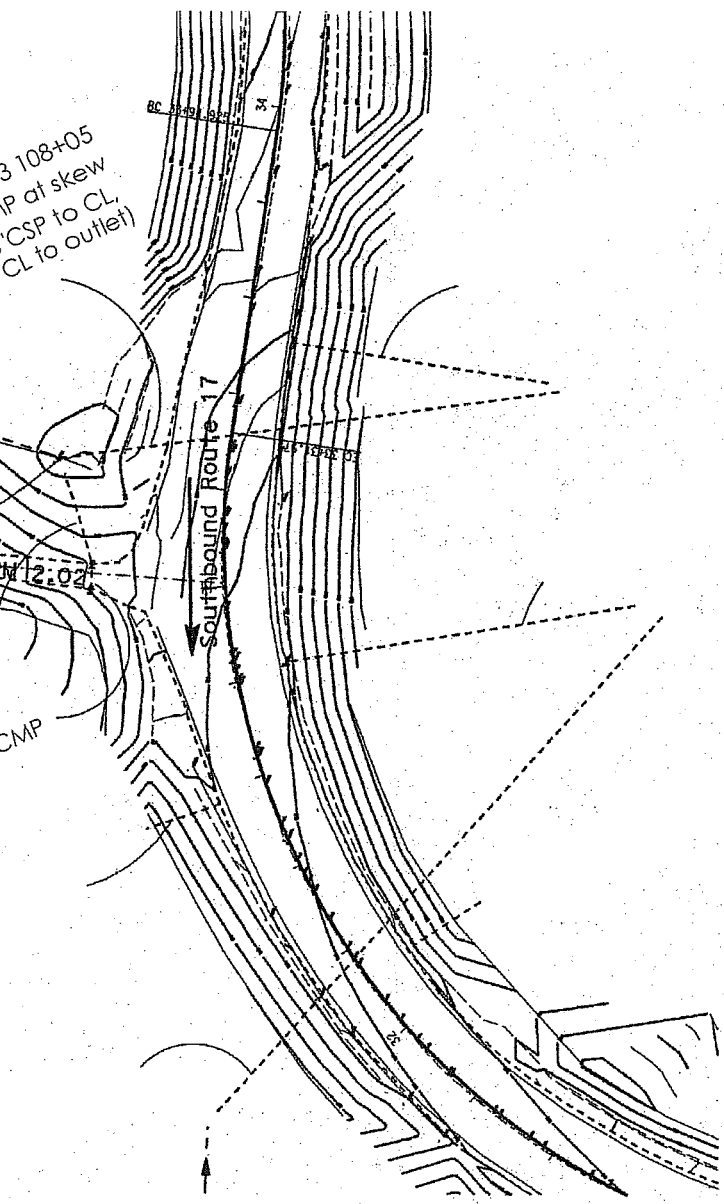


Plan

Brush Rd Damaged Culvert

Near SCI 17 PM 2.02

3 108+05
IP at skew
(CSP to CL,
CL to outlet)



Brush Road
Improvement Plans

ROY A. NELSON, CE
24665 GLENWOOD DR
LOS GATOS, CA 95025
408-355-4305

8/18/06

Pete Messa & Sons Inc.

26690 San Jose-Soquel Rd.

Los Gatos, CA. 95033

License # 403017

Telephone: (831)476-8221

Fax: (831)476-5947

BID PROPOSAL

DATE: 11/11/06

CUSTOMER NAME & ADDRESS:

Brush Road Association

Los Gatos, Ca.

PROJECT NAME & ADDRESS:

Brush Rd. Culvert Repair

Brush Rd., Los Gatos, Ca.

PLANS & SPECIFICATIONS:

1. Roy A. Nelson, C.E., Brush Road Improvement Plan, dated 8/18/06, preliminary proposed repair set.

PLEASE REVIEW THE FOLLOWING BID ITEMS FOR SITE WORK ON THE ABOVE REFERENCED PROJECT. WE PROPOSE TO PROVIDE LABOR, EQUIPMENT, AND MATERIALS TO COMPLETE THE FOLLOWING WORK:

ONSITE SCOPE OF WORK:

1. Install improvements for culvert repair as per proposed repair plan. Some plan details to be confirmed prior to construction.

Item Budget: \$102,000.00

OFFSITE SCOPE OF WORK: NONE.

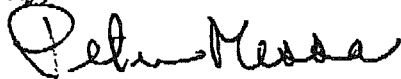
EXCLUSIONS:

- 1) Engineering and staking.
- 2) Cost and provision of any required site specific permits, right of ways, inspections, and material tests, unless otherwise noted herein.
- 3) All costs relating to the discovery of contaminated materials or toxins on this project site.
- 4) Installation, relocation, and/or removal of utilities and undisclosed underground objects such as tanks and utilities.
- 5) Cost for Bonding, if required.

- 6) Protective fencing, if required, unless otherwise noted herein.
- 7) Erosion control measures such as seeding, mulching, netting, silt fencing, etc., unless otherwise noted herein.
- 8) Sub-excavation below lines and grades shown on plans. No Soils Report was provided.

THANK YOU FOR THE OPPORTUNITY TO PROVIDE INPUT ON THIS PROJECT. IF YOU HAVE ANY QUESTIONS REGARDING THIS BID AND PROPOSAL, PLEASE CONTACT ME AT (831)476-8221. PAYMENT TERMS: PROGRESS PAYMENTS DUE MONTHLY AND/OR ANY UNPAID BALANCE DUE UPON SATISFACTORY COMPLETION OF SCOPE OF WORK. CONTRACT PROVIDED UPON REQUEST.

Sincerely,



**PETER G. MESSA, PRESIDENT
PETE MESSA & SONS, INC.**

ACCEPTANCE OF TERMS OF THIS PROPOSAL:

BY:

PRINT NAME:

TITLE:

DATE:

*phone / fax
3534677*

Up Grade Construction & Drilling, Inc.

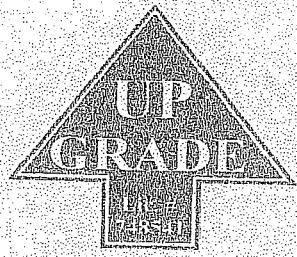
P.O. Box 13069
Coyote, Ca 95013

California Certified Small Business #26582
408-690-8640 Tax # 408-608-1800

PROPOSAL / CONTRACT

Proposal #		Date
3120	upgradc@calcom.us	2/4/2007

NAME / ADDRESS
Brush Road Improvement Los Gatos, Ca



RE: DRAINAGE.	Terms
PROJECT SITE:	Due on receipt

UP GRADE CONSTRUCTION & DRILLING, INC. WILL SUPPLY ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE FOLLOWING:

PROPOSED REPAIR AND DRAINAGE MODIFICATION TO EXISTING DRAINAGE UNDER BRUSH ROAD. -SCOPE OF WORK BASED ON PLANS DESIGNED BY ROY A. NELSON, CE 8-18-06 -NEED STRUCTURAL PLANS ON CONCRETE HEAD WALL -RECOMMEND SOIL ENGINEER TO REVIEW DRAINAGE PLAN.	123,480.00
TOTAL COST OF WORK	
	\$123,480.00

ACCEPTANCE

YOU ARE HEREBY AUTHORIZED TO FURNISH ALL LABOR AND MATERIALS REQUIRED TO COMPLETE THE WORK MENTIONED IN THE ABOVE PROPOSAL AND AGREE TO PAY THE AMOUNT IN SAID PROPOSAL ACCORDING TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE OF THIS CONTRACT TO UP-GRADE CONSTRUCTION & DRILLING, INC.

UP-GRADE CONST. & DRILLING, INC.	DATE	AUTHORIZED SIGNATURE	DATE
BY: <i>[Signature]</i>	2/4/07	BY: <i>[Signature]</i>	